



PORTABLE PERISTALTIC SAMPLER · ICE-COOLED

Model PST Portable Peristaltic Samplers

Built for field deployment, the PST pairs a rugged, compact design with active ultrasonic fluid sensing and sampling software built for accuracy and repeatability, whether you're pulling discrete grabs or full composite sets from your source.

Built for NPDES compliance, industrial pretreatment, combined sewer overflow, storm water, and everyday process control.



WEIGHT (DRY)	DIAMETER	TUBING LIFE	TRANSPORT VELOCITY	REPEATABILITY
27.6 lbs*	<18 in	1.5M Rev.	4.4 ft/sec	±0.5%

* Single-bottle base unit, without battery. See Specifications for full configuration weights.



Reliable Peristaltic Pump

Field-proven 3/8-in (9.53 mm) ID pump built to meet EPA intake-velocity criteria and hold up to sustained field use. Corrosion-resistant ABS housing and clear cover keep rollers and tubing visible and the tube inspectable without ever pulling the pump apart. High transport velocity — well above the low end of the 2-10 ft/sec EPA recommended — ensures representative samples, and consistent, accurate delivery holds up even as head height changes. Tubing is rated for 1,500,000 revolutions (24,000,000 pump counts) of typical life, cutting down on maintenance intervals, downtime, and cost.



Rugged, Intuitive Controller

Microprocessor-based controller and bottle case share a NEMA 4X/NEMA 6 ABS enclosure, built for the conditions samplers actually work in. Data logging, operating-status review, and multiple flow and time modes come standard. A step-by-step menu, dedicated keypad, and large backlit LCD keep programming fast — even for a technician working by headlamp — without digging through nested menus to find a setting.



Ice-Cooled Sample Storage

The insulated bottle case holds up to 15 lbs of ice alongside 24 one-liter bottles, maintaining the EPA-recommended 0–4°C sample temperature without a compressor to protect in the field. An average thermal resistance factor of R-12 keeps hold time predictable: roughly $59 \times (\text{lbs ice}) \div \text{average ambient temperature (°C)}$ hours of ice life. Not recommended for use below 32°F.



Single or Multiple Bottle Sampling

Bottle configurations cover single-bottle composite sampling to 24-bottle discrete sampling. Multi-bottle operation requires the multi-bottle controller, specified at the time of order — a multi-bottle unit can run single-bottle, but a single-bottle unit requires factory conversion to add multi-bottle capability.



Manning PST Portable Sampler — Specifications

Size (H × D)	27.75 in (70.5 cm) high × 17.75 in (45.08 cm) diameter
Weight (dry)	Base unit (no battery), single bottle: 27.6 lbs (12.52 kg). With 24-bottle (1 L): 34 lbs (15.42 kg). 12 V, 8 Ah battery: 5.5 lbs (2.4 kg). 12 V, 18 Ah battery: 15.0 lbs (6.8 kg).
Environmental Protection (sampler)	NEMA 4X/NEMA 6 ABS Enclosure around electromechanical components.
Sample Cooling	Bottle case holds 15 lbs of ice with 24 one-liter bottles; average thermal resistance factor R-12 .
Est. 0–4°C Temperature Time	59 × (lbs ice) / avg temp(°C) = Avg Hours of Ice (less in sun, more in shade).
Temperature Limits	32–120°F (0–48.9°C).
Sample Pump	High-speed 3/8-in (9.53 mm) peristaltic 12 VDC pump, impact- and corrosion-resistant body, dual-roller mechanism.
Pump Safety	Clear pump cover removal stops powered rotation of pump.
Pump Tubing / Life	Silicone tubing, 1,500,000 revolutions (24,000,000 pump counts) typical life; varies with setup.
Maximum Lift	28 ft (8.5 m) *Over 20 ft
Transport Velocity	4.396 ft/sec @ 5 ft of lift (1.34 m/sec @ 1.5 m), exceeding the EPA-recommended minimum of 2 ft/sec (0.61 m/sec).
Sample Volume	Programmed directly in 1-mL increments.
Repeatability	±0.5% of set volume, or 5 mL, whichever is greater.
Fluid Sensor	Non-contacting active ultrasonic.
Controller	Microprocessor controlled; internal battery (5-year typical); hermetically sealed 24-key keypad, 2-line × 20-character backlit display; Clock accurate to 1 min/month.
Power	12VDC: Battery: 8 Ahr, 18 Ahr; Power Supply: 110/220V 60/50 Hz VAC.
I/O	Contact closure; optional pulse (5-15VDC), 4–20 mA, serial out (RS-232).

**Suction Height/Driving Pressure: 0 ft/14.73 psi, 10 ft/9.3 psi, 20 ft/4.4 psi, 25 ft/1.9 psi. Recommended to 20 ft. Ask about booster pump setups.*

Sampler Programming

- Data logging (512-event capacity)
- Flow proportional pacing
- Flow pacing with time override
- Flow pacing with delay sampling
- Flow pacing, maintained event sampling
- Totalized flow pacing (analog input)
- Uniform / non-uniform time intervals
- Bottle grouping
- Multiple bottles / samples per bottle
- Multiple bottle compositing
- Program delay (time or flow)
- Sampling from external device input
- Hydrologic level event mode
- Real-time clock (time and date)
- Password protection
- Settable sample volume
- Pump tubing life warning indicator
- Manual test cycle feature
- Activity review log (current & past)
- Intake fault alert
- Intake line purge and rinse
- Automatic shut-off
- Power fail / auto restart

Warranty

One year warranty.



Model Number Configuration

PST8 — 3/8-in (9.53 mm) ID peristaltic pump portable sampler system. Select one option from each category to build a complete configuration number.

PST8

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Select one option from each category below, left to right (Power Source → Sampling Strainer Type), to complete the configuration number.

Power Source	A None — B 12 VDC, 8 Ah sealed lead acid battery — C 12 VDC, 18 Ah sealed lead acid battery — D 12 VDC Power Supply, 110–220 VAC input (not a charger). Battery cable included with all samplers.
Battery Charger Type	For use with Power Source options B and C only. 1 None — 2 12V 800 mA three-stage charger, 110–220 VAC input — 3 12V 1.8A (high-output) two-stage charger, 110/220 VAC input.
Input/Output Option	A Contact closure — B A + 4–20 mA — C A + RS-232 — D B + RS-232 — E 12 VDC pulsed — F E + 4–20 mA — G E + RS-232 — H F + RS-232
Fluid Sensor	2 Active Ultrasonic Sensor
Bottle Configuration	A Single Bottle (composite sampling) — C Multi-Bottle (discrete sampling)
Bottle Type	1 None — 2 2.5-gal (10 L) polyethylene — 3 5-gal (20 L) polyethylene — 4 4-gal (15 L) polyethylene — 5 2.5-gal (10 L) glass w/PTFE cap liner — 6 24× 1000-mL polyethylene (multi) — 7 24× 500-mL polyethylene (multi) — 8 2.5-gal (10 L) glass w/foam liner cap — 9 5-gal (20 L) polyethylene w/splashguard & transport lid
Sampling Hose Type	All hose 3/8-in (9.53 mm) ID. A None — connector only. PVC: B 10 ft, C 25 ft, D 50 ft, E 100 ft. Solid PTFE (or equal): F 10 ft, G 25 ft, H 50 ft, J 100 ft.
Sampling Strainer Type	1 None — 2 PVC strainer, 3/8 in — 3 Stainless steel strainer, 3/8 in — 4 Standard Flex Strainer, 3/8 in — 5 Heavy Flex Strainer, 3/8 in

Manual included with all samplers.



Engineering Specification

Written for direct use in submittals. Plain numbered list, no design elements — copy and paste as needed.

1. The sampler is suitable for automatic collection and preservation of composite or discrete liquid samples.
2. The controller and bottle case enclosures are made of ABS with NEMA 4X/NEMA 6 ratings.
3. All wetted parts have a minimum internal diameter of 3/8 inch (9.53 mm). Strainer: PVC or stainless steel. Intake Hose: PVC or PTFE. Pump Tubing: silicone.
4. The sampler incorporates a high-speed 3/8-in (9.53 mm) ID peristaltic pump with two rollers of at least 0.7-in (17.78 mm) diameter to increase tubing life. Pumps using smaller rollers are unacceptable. The roller mechanism uses a bearing to increase pump life. The pump body is constructed of corrosion-resistant, high-impact Acrylonitrile Butadiene Styrene (ABS). The pump mechanism has a clear cover plate which enables visual inspection of rollers, pump spindle, and tubing. Samplers requiring removal of part or all of the pump housing for visual inspection is unacceptable.
5. The sample liquid must be under forced flow at all times and shall not pass through a metering chamber, distribution plate, or valves. The sampler is equipped with a liquid sensing system that calculates the flow rate of the liquid in the intake line each collection cycle.
6. Using the optional kit, multi-bottle unit is convertible in the field to single bottle without using special tools. Single-bottle units must be returned to the factory for conversion to multi-bottle.
7. The sampler collects composite and/or discrete samples. For composite sampling, an overflow protection mechanism shall automatically terminate any further sampling. Discrete sampling can be multiple bottles of the same sample or multiple samples in multiple bottles.
8. Bottle full condition is detected by using a stainless steel sensor located in the bottleneck. It is easily removable for cleaning or replacement without using special tools.
9. Systems relying upon sensing bottle weight to determine sample volume shall be unacceptable due to the variance in sample densities, and the need to calibrate the weight sensing mechanism.
10. The sampler is capable of transport velocity of 4.396 ft/sec through 3/8-in (9.53 mm) ID tubing at a draw height of 5 ft (1.5 m) using the 3/8-in (9.53 mm) ID pump, which is well in excess of the EPA-recommended minimum of 2 ft/sec (0.61 m/sec).
11. A hermetically sealed 24-button keypad and a 2-line by 20-character alphanumeric backlit LCD is linked to a programmable CPU.
12. Sample is cooled by ice. The bottle case holds approximately 15 lbs of ice with 24 one-liter bottles and has an average thermal resistance factor of R-12, maintaining the EPA-recommended 0–4°C sample temperature. Estimated hold time for other ice loads: $59 \times (\text{lbs ice}) / \text{avg temp}(^{\circ}\text{C}) = \text{Avg Hours of Ice}$.
13. A password feature restricts access to authorized persons only.
14. The software is menu driven, prompting input of requested information using the keypad. The display indicates each programming step. After entering data, the system automatically advances to the next programming step.
15. A sampling program can be delayed by entering the number of hours and minutes for the sampler to count down, or the number of contact closures to occur. The delay is independent of the sampling interval.
16. The sampler purges the sample hose immediately prior to and following each sample. Purge duration is selectable.
17. The sampler has the capability to rinse the sample hose with source liquid prior to each sample selected by user.
18. The sampler has an optional weighted strainer of PVC or stainless steel.
19. If a sample is not obtained on the first attempt, the sampler immediately retries to collect the sample. If a sample still cannot be collected, the sampler will omit that sample and continue the sampling sequence.
20. When initiated by a keystroke, the sampler is capable of manual sampling independent of a programmed sequence. The sampler logs manual collections, and is selectable to allow taking test samples: a) only when the sampler is not running a program, b) during a program but the test samples are not counted as a sample, or c) during a program and the test samples count as a sample.
21. In the Time Mode, the interval between samples is adjustable (1–5999 min. in 1-minute increments). In the Flow Mode, it accepts and totalizes contact closures (1–9999). A 12 VDC pulsed input or a 4–20-mA DC analog signal input for sampling at a user set point are also available.
22. A hydrologic event algorithm is used to enable sample programming for hydrologic events based on a combination of parameters including water level, differential (rising and falling) water levels, and time defaults following guidelines established by the U.S. Geological Survey.
23. Operating status is reviewed with minimal effort, and includes: program status, current time, time and date program started, active bottle number, active group period, number of samples collected, volume collected, number of contact closures, number of line blockages, minutes or flow signals remaining to the next sample, number of samples remaining, volume remaining, and time to override. All program settings are reviewed in addition to seeing the review of the completed program.
24. An optional suspension harness allows the sampler to be hung in manholes and other confined or tight spaces for portable, transportable field deployment.
25. This sampler is a Manning Model PST series.

In the interest of improving and updating its equipment, Manning reserves the right to alter specifications for equipment at any time.